

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application.

**Listing of Claims:**

1. (Currently Amended) A method for analyzing a sample containing particles to detect and characterize target particles having a plurality of detectable characteristics in a fixed volume capillary that contains a fluorescent background and which exhibits background characteristics, the method comprising:
  - (a) scanning the fixed volume capillary containing the sample to generate a plurality of channels of data, wherein each channel of data comprises a distinct detectable characteristic and a distinct background characteristic;
  - (b) sampling each of the channels of data to produce corresponding sets of pixel values;
  - (c) generating sets of enhanced pixel values by independently modifying each set of pixel values to selectively enhance spatial features that are indicative of a target particle;
  - (d) removing from one or more sets of enhanced pixel values the distinct background characteristic for the corresponding channel;
  - (e) independently establishing ~~noise~~ threshold values for the detection of said particles for each set of enhanced pixel values;

[[~~(g)~~]] ~~(f)~~ independently identifying, in each set of enhanced pixel values, groups of above-threshold pixels located in patterns that are diagnostic of said particles;

[[~~(h)~~]] ~~(g)~~ independently identifying, for each group of above-threshold pixels located in a diagnostic pattern in a particular set of enhanced pixel values, the corresponding below-threshold or at-threshold pixels in the remaining sets of enhanced pixel values; and

[[~~(i)~~]] ~~(h)~~ characterizing the target particles in the sample by analyzing the pixels independently identified in steps ~~(f)~~ and ~~(g)~~ ~~and ~~(h)~~~~;

whereby particles are initially identified and analyzed in channels with above-threshold pixels located in patterns diagnostic of said particles, and said particles are then independently analyzed in all remaining channels by locating pixels in the same positions as the above-threshold pixels initially identified.

2. (Currently Amended) In a method for analyzing a sample containing particles to detect and characterize target particles having a plurality of detectable characteristics in a fixed volume capillary that contains a fluorescent background and which exhibits background characteristics, the method comprising:

(a) scanning the fixed volume capillary containing the sample to generate a plurality of channels of data, wherein each channel of data comprises a distinct detectable characteristic and a distinct background characteristic;

(b) sampling each of the channels of data to produce corresponding sets of source pixel values;

(c) summing the sets of source pixel values to generate a composite image;

(d) calculating a threshold for particle detection in said composite image independently in each set of source pixel values;

(e) performing particle detection in said composite image using said threshold independently in each set of source pixel values using the corresponding threshold;

(f) identifying, for each particle identified in a particular set of source pixel values in step (e), the corresponding pixels in the remaining sets of source pixel values ~~identifying, for each particle identified in said composite image, the corresponding pixels in the sets of source pixel values~~; and

(g) analyzing the pixels identified in step (f);

~~the improvement comprising:~~

~~(i) calculating the threshold for particle detection independently in each set of source pixel values;~~

~~(ii) performing particle detection independently in each set of source pixel values using the corresponding threshold; and~~

~~(iii) identifying, for each particle identified in a particular set of source pixel values in step (2), the corresponding pixels in the remaining sets of source pixel values; and~~

~~(iv) analyzing the pixels identified in steps (2) and (3).~~

3. (Currently Amended) In a method for analyzing a sample containing particles to detect target particles having a plurality of detectable characteristics in a fixed volume capillary that contains a fluorescent background and which exhibits background characteristics, the method comprising;

(a) scanning the fixed volume capillary containing the sample to generate a plurality of channels of data, wherein each channel of data comprises a distinct detectable characteristic and a distinct background characteristic;

(b) sampling each of the channels of data to produce corresponding sets of source pixel values;

(c) ~~summing the sets of source pixel values to generate a composite image;~~

~~\_\_\_\_\_ (d) calculating a threshold for particle detection independently in each set of source pixel values without first summing the source images in said composite image; and~~

~~(ed) performing particle detection independently in each set of source pixel values using the corresponding threshold in said composite image using said threshold;~~

~~\_\_\_\_\_ the improvement comprising:~~

~~\_\_\_\_\_ (i) calculating the threshold for particle detection independently in each set of source pixel values without first summing the source images; and~~

~~\_\_\_\_\_ (ii) performing particle detection independently in each set of source pixel values using the corresponding threshold.~~